

---

---

रेशों से बनी रस्सियाँ — तारकोलीकृत  
सन/पटसन की डोरी, दोहरी — विशिष्टि  
( दूसरा पुनरीक्षण )

**Fibre Ropes — Tarred Hemp/Jute  
Marline, Two Ply — Specification**  
( *Second Revision* )

ICS 59.080.50

© BIS 2021



भारतीय मानक ब्यूरो  
BUREAU OF INDIAN STANDARDS  
मानक भवन, 9 बहादुरशाह ज़फर मार्ग, नई दिल्ली – 110002  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI-110002  
[www.bis.gov.in](http://www.bis.gov.in) [www.standardsbis.in](http://www.standardsbis.in)

## FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by Cordage Sectional Committee had been approved by the Textile Division Council.

This standard was first published in 1961 and revised in 1972. It has again been revised now to include jute fibre and to align it with latest trade practices. The sampling plan has also been harmonized with other standards on similar products.

The composition of the Committee responsible for the formulation of this standard is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

# Indian Standard

## FIBRE ROPES — TARRED HEMP/JUTE MARLINE, 2 PLY — SPECIFICATION

( Second Revision )

### 1 SCOPE

**1.1** This standard specifies the requirements for tarred hemp/jute marline, 2 ply.

**1.2** This standard does not specify the general appearance, feel etc. of the marline.

### 2 REFERENCES

The standards listed in Annex A contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of these standards.

### 3 TERMINOLOGY

For the purpose of this standard the definitions given in IS 3871 shall apply.

### 4 MANUFACTURE

#### 4.1 Hemp Fibre

The fibre used in the manufacture in the marline shall be hemp (*Cannabis sativa* or *Crotalaria juncea*) or jute (*Corchorus olitorius*) true to its type, unadulterated free from defects and shorts. It should be well hackled.

#### 4.2 Yarn

The hemp/jute yarn shall be evenly spun. The direction of twist in the single yarn shall be 'Z' and that in the plied yarn shall be 'S'.

NOTE — The linear density of the untarred yarn should be approximately 3.6 ktex.

#### 4.3 Marline

The marline shall be made of two yarns twisted together with 'S' twist.

#### 4.4 Skein

Each skein should be continuous throughout its length and should not contain any loose ends.

### 5 REQUIREMENTS

**5.1** The marline shall comply with the requirements specified in Table 1.

**Table 1 Requirements of Tarred  
Hemp/Jute Marline**

( Clause 5.1 )

| Sl No. | Characteristic                                               | Requirement | Method of Test, Ref to |
|--------|--------------------------------------------------------------|-------------|------------------------|
| (1)    | (2)                                                          | (3)         | (4)                    |
| i)     | Linear density, ktex (approx.)                               | 12.5        | IS 7071 (Parts 1 to 3) |
| ii)    | Turns per metre, <i>Min</i>                                  | 47          | IS 832                 |
| iii)   | Runnage, m/25 kg, <i>Min</i>                                 | 2016        | A-2                    |
| iv)    | Breaking load, 60 cm gauge length, kg, <i>Min</i>            | 45          | IS 7071 (Part 4)       |
| v)     | Tar content, percent                                         | 25 to 30    | A-3                    |
| vi)    | Ash content, percent, <i>Max</i>                             | 4           | IS 199                 |
| vii)   | Water soluble content of extracted yarn, percent, <i>Max</i> | 5           | IS 3456                |

### 6 PACKING

Unless otherwise agreed to between the buyer and the seller, the marline shall be made into skeins each weighing approximately 0.5 kg. Fifty such skeins shall be packed into a bundle.

### 7 MARKING

**7.1** Each roll of webbings shall be legibly marked with the following information:

- a) Name of the material;
- b) Weight of the bundle;
- c) Lot/Batch no.; and
- d) Indication of the source of manufacture.

#### 7.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity

assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the product(s) may be marked with the Standard Mark.

## 8 SAMPLING

**8.1** The lot shall consist of all the skeins delivered to a buyer against one despatch note.

**8.2** Unless otherwise sampling plan is specified in the contract or order, the sampling plan as given in Table 2 may be used for inspecting and testing of skeins against this standard. The number of skeins to be selected from

the lot for assessing manufacture and workmanship (see 4.1 to 4.4) and testing nominal linear density, turns per metre and runnage shall be as per col 2 of Table 2. The number of test specimens to be selected for other tests shall be in accordance with col 4 of Table 2. To ensure the randomness of selection, IS 4905 may be followed.

### 8.3 Criteria for Conformity

The lot shall be declared conforming to the requirements of this standard if the total number of defective samples/sub-samples does not exceed the permissible numbers given in col 3 or col 5 of Table 2 as applicable.

**Table 2 Sampling Plan for Hemp/Jute Marlines**  
( Clause 8.2 )

| Lot Size       | Sample Size | Permissible No. of<br>Defectives Samples | Sub-Sample Size<br>(to be drawn from Sample) | Permissible No. of<br>Defectives Sub-Samples |
|----------------|-------------|------------------------------------------|----------------------------------------------|----------------------------------------------|
| (1)            | (2)         | (3)                                      | (4)                                          | (5)                                          |
| 2 to 25        | 3           | 0                                        | 3                                            | 0                                            |
| 26 to 90       | 13          | 1                                        | 3                                            | 0                                            |
| 91 to 150      | 20          | 2                                        | 13                                           | 1                                            |
| 151 to 280     | 32          | 3                                        | 13                                           | 1                                            |
| 281 to 500     | 50          | 5                                        | 20                                           | 1                                            |
| 501 to 1200    | 80          | 7                                        | 32                                           | 2                                            |
| 1201 and above | 125         | 10                                       | 50                                           | 3                                            |

NOTE — If sample size equals or exceeds lot size, carry out 100 percent inspection.

## ANNEX A

( Clause 2 )

## LIST OF REFERRED INDIAN STANDARDS

| <i>IS No.</i>                           | <i>Title</i>                                                                                                                                          | <i>IS No.</i>                    | <i>Title</i>                                                                                  |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------|
| 199 : 1989                              | Textiles — Estimation of moisture, total size or finish, ash and fatty matter in grey and finished cotton textile materials ( <i>third revision</i> ) | 3871 : 2013/<br>ISO 1968 : 2004  | Fibre ropes and cordage — Vocabulary ( <i>third revision</i> )                                |
|                                         |                                                                                                                                                       | 4905 : 2015/<br>ISO 24153 : 2009 | Random sampling and randomization procedures ( <i>first revision</i> )                        |
| 832 (Part 1) : 2011/<br>ISO 2061 : 1995 | Textiles — Determination of twist in yarns: Part 1 Direct counting method ( <i>second revision</i> )                                                  | 7071 (Part 1 to 3) :<br>1989     | Ropes and cordages — Methods of physical test ( <i>first revision</i> )                       |
| 3456 : 1966                             | Method for determination of water soluble matter of textile materials                                                                                 | 7071 (Part 4) :<br>1986          | Methods of physical test for ropes and cordages: Part 4 Breaking load and elongation at break |

**ANNEX B***( Foreword )***COMMITTEE COMPOSITION**

Cordage Sectional Committee, TXD 09

| <i>Organization</i>                                                                   | <i>Representative(s)</i>                                             |
|---------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Indian Institute of Technology, Delhi                                                 | PROF R. S. CHATTOPADHYAY ( <b>Chairman</b> )                         |
| Association of Synthetic Fibre Industries, New Delhi                                  | SHRI M. S. VERMA                                                     |
| Azuka Synthetics LLP, Panchkula                                                       | SHRI SUSHANT GUPTA                                                   |
| Chhotanagpur Rope Works Pvt Ltd, Ranchi                                               | SHRI SIDDHARTH JHAWAR<br>SHRI ANURAG JHAWAR ( <i>Alternate</i> )     |
| Coast Guard Headquarters, New Delhi                                                   | CMDT NUPUR KULSHRESTHA<br>SHRI D. D. SHARMA ( <i>Alternate</i> )     |
| Coir Board, Alleppy                                                                   | SHRIMATI ANITA JACOB<br>SHRIMATI SUMI SEBESTIAN ( <i>Alternate</i> ) |
| Crown Industries, Kolkata                                                             | SHRI SANJEEV AGARWAL                                                 |
| Delta Ropes Manufacturing Co Ltd, Kolkata                                             | SHRI ANAND MAJARIA                                                   |
| Directorate of Quality Assurance (Naval)                                              | CAPT A. K. SHARMA<br>SHRI G. S. N. MURTHY ( <i>Alternate</i> )       |
| Garware Technical Fibres Ltd, Pune                                                    | SHRI KISHOR J. DARDA<br>SHRI S. J. CHITNIS ( <i>Alternate</i> )      |
| Indian Jute Mills Association (IJMA), Kolkata                                         | SHRI SAMIR KR CHANDRA<br>SHRI BHUDIPTA SAHA ( <i>Alternate</i> )     |
| Indian Jute Industries' Research Association, Kolkata                                 | SHRI PALASH PAUL<br>SHRI PARTH SANYAL ( <i>Alternate</i> )           |
| Jayashree Fibre Products Limited, Kolkata                                             | SHRI N. K. SOMANI<br>SHRI M. K. BIYANI ( <i>Alternate</i> )          |
| Kohinoor Ropes Pvt Ltd, Mumbai                                                        | SHRI VINAY CHANDAK<br>SHRI ANUPAM MAHESHWARI ( <i>Alternate</i> )    |
| Ministry of Defence (DGQA), New Delhi                                                 | SHRI M. H. BASAVRAJ<br>SHRI K. I. SINGH ( <i>Alternate</i> )         |
| ICAR-National Institute of Natural Fibre Engineering and Technology (NINFET), Kolkata | DR SURAJIT SENGUPTA<br>DR KARTICK SAMANTA ( <i>Alternate</i> )       |
| Office of the Jute Commissioner, Kolkata                                              | SHRI SOUMYADIPTA DATTA<br>SHRI P. K. BISWAS ( <i>Alternate</i> )     |
| Office of the Textile Commissioner, Mumbai                                            | SHRI JAMIL AHMED<br>SHRI N. K. SINGH ( <i>Alternate</i> )            |
| Reliance Industries Limited, Mumbai                                                   | SHRI RAJJEV GUPTA<br>SHRI KESHAV PAREEK ( <i>Alternate</i> )         |
| Protherm Engineering Pvt Ltd, Faridabad                                               | SHRI RATNESH DEWAN<br>SHRI SANJEEV KUMAR SHARMA ( <i>Alternate</i> ) |
| Shipping Corporation of India Ltd, Mumbai                                             | CAPT YOGESH PURI                                                     |

| <i>Organization</i>                                       | <i>Representative(s)</i>                                                                               |
|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Thanawala & Co, Mumbai                                    | SHRI UPENDRA K. THANAWALA<br>SHRI HEMAL M. THANAWALA ( <i>Alternate</i> )                              |
| Tuff Ropes Pvt Ltd, Silvassa                              | SHRI ANURAG SARIN<br>SHRI SHASHI BHUSHAN NEGI ( <i>Alternate</i> )                                     |
| BIS Director General                                      | SHRI A. K. BERA, SCIENTIST 'F' AND HEAD (TXD)<br>[REPRESENTING DIRECTOR GENERAL ( <i>Ex-officio</i> )] |
| <i>Member Secretary</i>                                   |                                                                                                        |
| SHRI A. K. BERA<br>SCIENTIST 'F' AND HEAD (TEXTILES), BIS |                                                                                                        |





## Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act, 2016* to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

### Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

### Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

This Indian Standard has been developed from Doc No.: TXD 09 (15982).

### Amendments Issued Since Publication

| Amend No. | Date of Issue | Text Affected |
|-----------|---------------|---------------|
|           |               |               |
|           |               |               |
|           |               |               |
|           |               |               |

## BUREAU OF INDIAN STANDARDS

### Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002  
Telephones: 2323 0131, 2323 3375, 2323 9402

Website: [www.bis.gov.in](http://www.bis.gov.in)

### Regional Offices:

Telephones

|          |                                                                        |                                                |
|----------|------------------------------------------------------------------------|------------------------------------------------|
| Central  | : Manak Bhavan, 9 Bahadur Shah Zafar Marg<br>NEW DELHI 110002          | { 2323 7617<br>2323 3841                       |
| Eastern  | : 1/14 C.I.T. Scheme VII M, V.I.P. Road, Kankurgachi<br>KOLKATA 700054 | { 2337 8499, 2337 8561<br>2337 8626, 2337 9120 |
| Northern | : Plot No. 4-A, Sector 27-B, Madhya Marg<br>CHANDIGARH 160019          | { 265 0206<br>265 0290                         |
| Southern | : C.I.T. Campus, IV Cross Road, CHENNAI 600113                         | { 2254 1216, 2254 1442<br>2254 2519, 2254 2315 |
| Western  | : Manakalaya, E9 MIDC, Marol, Andheri (East)<br>MUMBAI 400093          | { 2832 9295, 2832 7858<br>2832 7891, 2832 7892 |

**Branches :** AHMEDABAD. BENGALURU. BHOPAL. BHUBANESHWAR. COIMBATORE.  
DEHRADUN. DURGAPUR. FARIDABAD. GHAZIABAD. GUWAHATI.  
HYDERABAD. JAIPUR. JAMMU. JAMSHEDPUR. KOCHI. LUCKNOW.  
NAGPUR. PARWANOO. PATNA. PUNE. RAIPUR. RAJKOT. VISAKHAPATNAM.

Published by BIS, New Delhi